

PATENT SPECIFICATION

818.700



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COMPLETE SPECIFICATION

Improvements in or relating to Suspension Devices for Building Elements

ERRATUM

SPECIFICATION No. 818,700

Page 3, line 59, for "construction" read
"constructed".

THE PATENT OFFICE
12th February, 1960

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consuming but also requires skilled workers.
In addition, dismantling for repair work is
difficult and expensive. Further in piping for
heating, drainage, lighting and so on, it has
not been possible, in a simple manner, to
provide a vertically adjustable suspension de-
vice, in drainage installations for example,
which can produce the necessary fall. This has
hitherto been effected by cementing in fixed
pipe holders or wire suspension means.

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The suspension means according to the in-
vention comprises a first part which is arranged
to be fastened to a ceiling or wall and to ex-
tend therefrom, said part having two oppo-
site sides of which one is smooth and the other
is provided with teeth which extend trans-
versely to at least one guide slot extending
through said part between said sides, a slide
having teeth adapted to co-act with the teeth
on said part and to be adjustable lengthwise
of said part, a supporting part for an element
to be carried by the suspension device, said
supporting part having a smooth side to abut

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firmly tightened it is sufficient to establish a
durable connection, which does not work loose
even in the event of vibration, between the
parts of the suspension device that are adjust-
able relative to one another.

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In respect of shape, the upper end member
of the suspension device may be adapted to
diverse practical requirements. It may be con-
structed to be angle shaped for direct fastening
by means of wood screws, or hook shaped for
hooking it into known cemented-in suspended
shells or the like, or as a perforated flat ele-
ment for fastening and suspending it on a
round iron hook for example, or as a wall
hook.

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A number of exemplified embodiments of
the subject of the invention are illustrated in
the drawing, in which:—

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Figure 1 shows an adjusting hanger with an
angle part, applied to suspended ceilings, in
section,

Figure 2 is a side view of the adjusting
hanger shown in Figure 1,

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Figure 3 is a modification of the adjusting hanger shown in Figure 1, for fastening to a batten as support for the ceiling,

Figure 4 is a side view of the adjusting hanger shown in Figure 3,

Figure 5 is a section of an adjusting hanger constructed after the style of a hinge,

Figure 6 is a side view of the adjusting hanger shown in Figure 5,

Figure 7 is a modification of the adjusting hanger shown in Figure 1, with a hook part adapted to be hooked in, in section,

Figure 8 is a side view of the adjusting hanger shown in Figure 7, and

Figure 9 is a section of an adjusting hanger having an upper end member of flat construction.

The suspension device according to Figures 1 and 2 comprises a first part 1, which is constructed as an angle, the short horizontal arm 4 of which serves for direct nailing to or other fastening on the upper ceiling 12. The longer vertical arm which extends from the ceiling is provided with at least one guide slot 2, two parallel guide slots 2 being illustrated in the example, and has on one side fine-pitch serrations 3 extending at right angles to the guide slots and over the entire length and width of said vertical arm. The slide 8, which is adjustable along the guide slots, has co-acting teeth 9, which engage in the serrations 3. The slide carries two fastening screws 7, which are disposed at the same height, pass through the guide slots 2, are provided with wing nuts 7a, and serve to guide the slide 8 longitudinally and to clamp the same fast. On the fastening screw there hangs, on the smooth side of the part 1 opposite the serrations 3, a support part 5 which is adjustable as to height or distance and which carries the second shell composed of building boards or slabs 14. For this purpose the part 5 has support surfaces 6 at its lower end. The length of the path of adjustment is limited by the guide slots 2 through which the fastening screws 7 pass. When the wing nut is not completely tightened, the support part 5 together with the slide 8 can be displaced and adjusted along the guide grooves 2 as desired in relation to the first part 1. After the desired air cavity and evenness of the ceiling parts 14 have been adjusted, the nut 7a of the screw 7 is firmly tightened, so that the teeth 3 and 9 interlock tightly by their inclined flanks.

The modified embodiment of the suspension device according to Figures 3 and 4 differs from that shown in Figure 1 in that the support part 5 is replaced by a wood batten 10 to which the building board or slab 14 is fastened by nailing. The wood batten is fastened on the slide 8 by two wood screws 13 which are staggered as to height, this vertical staggering being advantageous to prevent the wood from splitting. The arrangement of the slots 2 is such that the battens 10 or the like

do not come into contact with the actual ceiling or wall 12 when the minimum height adjustment 11 has been carried out.

A further embodiment of the subject of the invention is illustrated in Figures 5 and 6. In these Figures, the first part 15 is so connected to a so-called wall anchor 16 that the entire structure can be inserted and concreted into solid ceilings 12a, finished beams, and so on. The wall anchor 16 is joined to the part 15 by the hinge 19 and can be nailed to the formwork 20 by means of the nails 18. For stability purposes during the concreting process, a reinforcing tongue 17 is stamped out of the wall anchor 16 and shaped in such manner that on nailing to the formwork said tongue ensures the stability of the structure and holds the wall anchor vertical. At the same time, the tongue 17 covers the part 15 in such manner that connection with the concrete is impossible and folding down rendered possible after the formwork is removed. Attachment by nails 18 to the formwork is effected through holes provided in the part 17, said holes being so disposed that they come to lie offset over the guide slots 2 of the horizontal part 15. Apart from the sheet-metal tongue, the part 15 may also be protected against adhesion of the concrete by means of strips of adhesive paper or other materials. After the removal of the formwork the movable parts can be fitted to the folded down part 15, as shown by broken lines in Figure 5.

In the embodiment shown in Figures 7 and 8, the first part of the suspension device is constructed as a hook-shaped part 21 provided at its upper end with a slot 22 which is directed downward at an angle and by which said end member can be hooked for example into the anchor bar 23 of a *per se* known concreted-in suspended shell 24. The hook member 21 is provided with a guide slot 2 and teeth 3 directed transversely thereto. The slide 8 has co-acting teeth 9 which engage in the teeth 3 of the first part when the fastening screw 7 carried by the slide is tightened. The support part 25 carried by the shank of the screw 7 has a hole 26 beneath the fixed part for hooking in the round or flat iron 27, which latter is made hook-shaped in its lower part for the purpose of carrying round irons, pipes or the like 28.

In Figure 9 the first part is constructed as a flat part 32 with a hole 29. The support part 30 comprises a flat iron having at its lower end two hook-shaped projections 31 bent off in opposite directions for the direct accommodation of round irons, pipes or the like 28. If necessary, it is also possible to extend the first part 32 by means of an extension iron 33, the lower hook-shaped end of which engages through the hole 29. The first part 32 can also be screwed or nailed as an initial member to wooden beams or wall posts.

WHAT I CLAIM IS:—

1. A suspension device for building elements, particularly for lower ceiling parts or inner wall parts in double ceilings and walls, comprising a first part which is arranged to be fastened to a ceiling or wall and to extend therefrom, said part having two opposite sides of which one is smooth and the other is provided with teeth which extend transversely to at least one guide slot extending through said part between said sides, a slide having teeth adapted to co-act with the teeth on said part and to be adjustable lengthwise of said part, a supporting part for an element to be carried by the suspension device, said supporting part having a smooth side to abut said smooth side of said first part, and a fastening screw connecting the slide and supporting part through the guide slot and adapted to permit the smooth side of the supporting part to be slid over the smooth side of said first part and be locked in relation thereto.
2. A device as claimed in Claim 1, characterised in that the teeth extend over the entire length and width of the first part and over the entire co-acting surface of the slide.
3. A device as claimed in Claims 1 or 2, characterised in that the first part has two guide slots disposed parallel to one another for two fastening screws disposed on the slide.
4. A device according to Claim 3, characterised in that the fastening screws are disposed on the slide side by side at the same height.
5. A device as claimed in Claim 3, characterised in that the fastening screws are disposed on the slide so as to be staggered as to height, one being situated near the upper, the other near the lower edge of the slide.
6. A device as claimed in any one of the Claims 1 to 5, characterised in that fastening screws having wing nuts serve as fastening screws.
7. A device as claimed in any one of the Claims 1 to 5, characterised in that wood screws serve as fastening screws when an element to be fastened is a wood batten or the like.
8. A device as claimed in any of Claims 1 to 3, characterised in that the first part is constructed as an angle having a short arm for fastening and a longer arm for accommodating the guide slot or slots and the teeth.
9. A device as claimed in any of Claims 1 to 3, characterised in that the first part is constructed as a wall anchor.
10. A device as claimed in any of Claims 1 to 3, characterised in that the first part is constructed to be hook-shaped for suspension purposes.
11. A device as claimed in Claims 1, 3 and 9, characterised in that the first part is connected hinge-fashion to the wall anchor from which a reinforcing tongue is so stamped out and bent off that it covers the hinge-like part lying on the formwork and is adapted to be fastened to the formwork by nails passing through the guide slots of the said part.
12. A suspension device for building elements, particularly for lower ceiling parts or inner wall parts in double ceilings and walls, constructed and arranged to operate substantially as herein described with reference to Figures 1 and 2, or to Figures 3 and 4, or to Figures 5 and 6, or to Figures 7 and 8, or to Figure 9 of the accompanying drawings.

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Agents for the Applicant.

Fig. 1

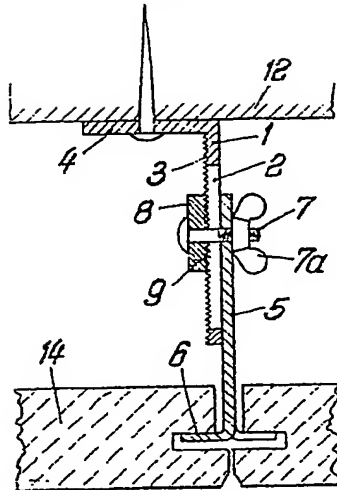


Fig. 2

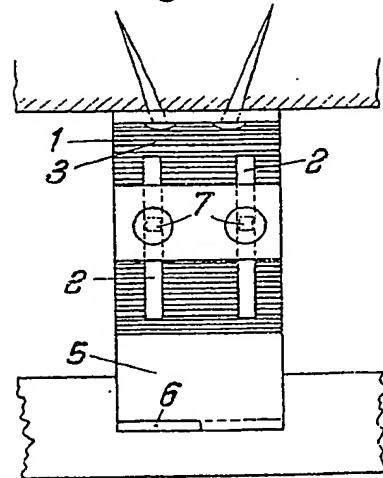


Fig. 3

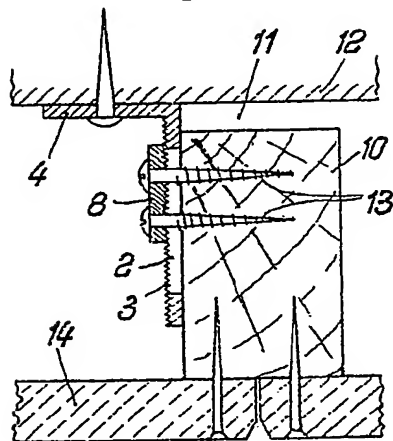
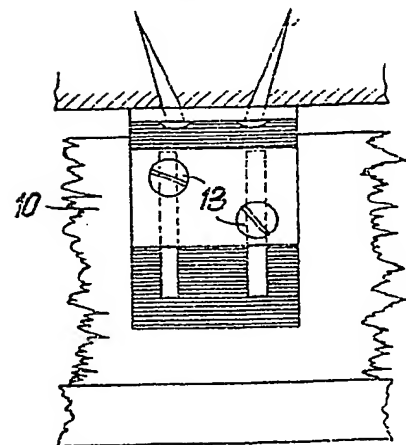


Fig. 4



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COMPLETE SPECIFICATION

2 SHEETS

This drawing is a reproduction of
the Original on a reduced scale.
SHEETS 1 & 2

Fig. 5

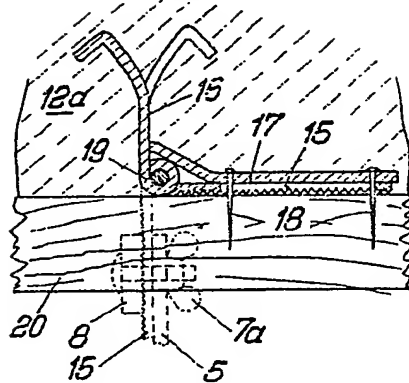


Fig. 6

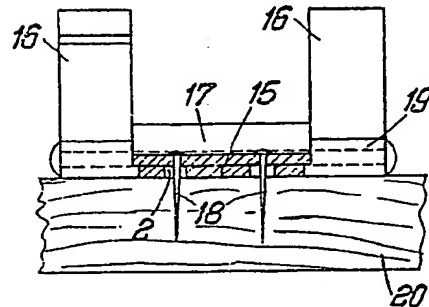


Fig. 7

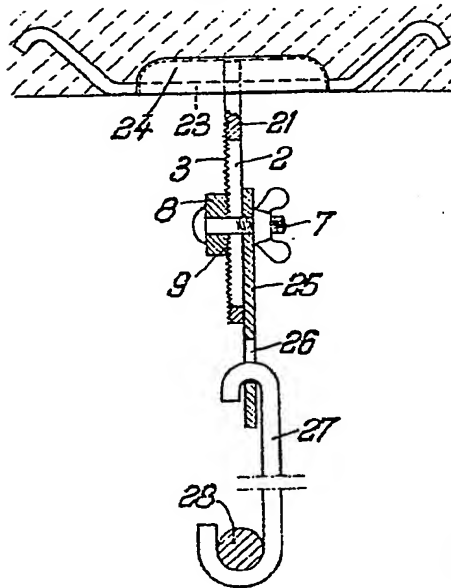


Fig. 8

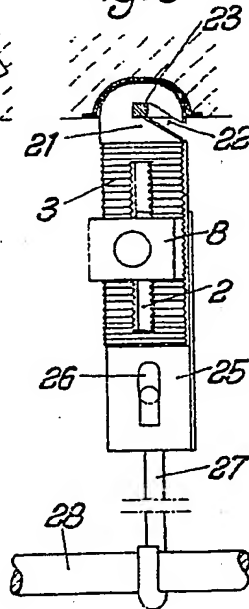
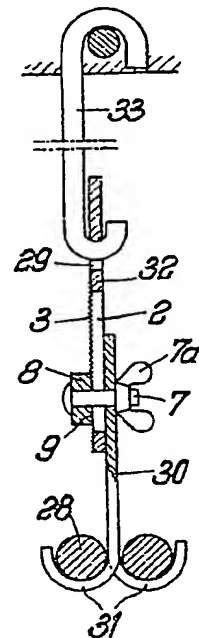


Fig. 9



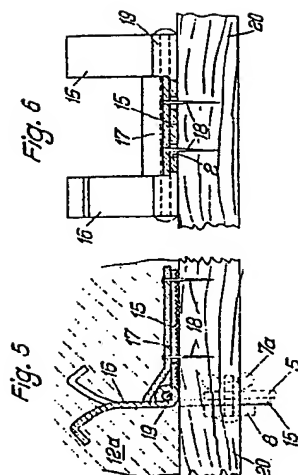
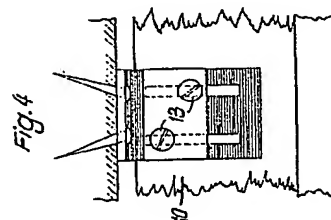
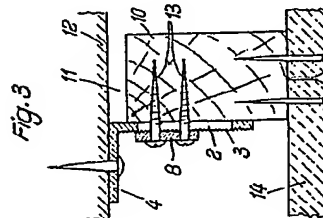
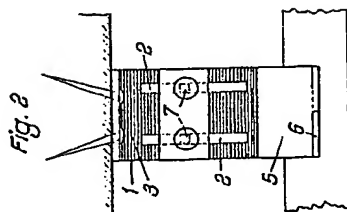
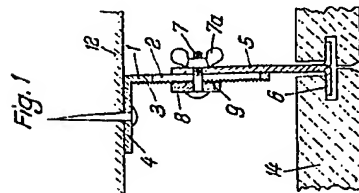


Fig. 6

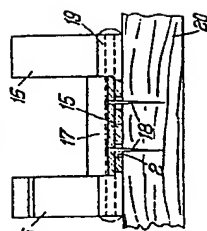


Fig. 8

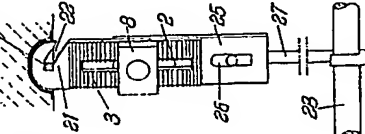


Fig. 9

